

### REMARKS

Claims 6-25 are pending, claims 1-5 having been cancelled by applicant in a prior amendment.

Applicant thanks the Examiner for withdrawal of the Examiner's 35 U.S.C. §§ 101 and 112 ¶1 rejections, in view of applicant's cancellation of original claims 1-5, and for entering the amended drawings, title and Summary section of the application.

Applicant acknowledges the Examiner's objection, under 35 U.S.C. § 112 ¶2, to claims 10 and 19 in view of proper use of trademarks/tradenames, and has further amended these claims to comply.

Applicant acknowledges the Examiner's maintained rejection, under 35 U.S.C. § 102(b) in view of Lenz (U.S. 5,784,539). Applicant respectfully traverses this rejection, based on the arguments of record as further clarified herein, particularly in view of the fundamental distinction between the "qualities," and "quality values" of Lenz, and the instant *bias values*, and further in view of the *absence* in the instant claimed subject matter of elements that are *required* by Lenz.

Applicant acknowledges the Examiner's rejection, under 35 U.S.C. § 103(a), over Lenz in view of Hekmatpour (U.S. 5,870,768). Applicant respectfully traverses this rejection, because Lenz, either alone or in combination with Hekmatpour, does not describe, teach or otherwise suggest the instant inventive claimed subject matter, and rather explicitly and fundamentally *teaches away* from the present claim subject matter.

Applicant has addressed the Examiner's remaining objections to the drawings and Specification.

No new matter has been added.

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## ***FORMALITIES***

*Drawings.* The Examiner has objected to Specification in relation to Figures 7 and 8, and has further objected to Figure 27, in view of the absence of descriptors for “B” and “B<sub>d</sub>” (Paper 10, at page 13).

Applicant has amended the Specification, as described herein, to address the issues with respect to Figures 7 and 8.

Additionally, applicant has herein submitted a revised Figure 27 that includes descriptors for “B” “B<sub>d</sub>” and “ADM” (absolute dependency). No new matter has been added.

Applicants contend that these revisions obviate the Examiner’s objections to the drawings..

### ***Rejection under 35 U.S.C. § 112 ¶2***

The Examiner has objected to claims 10 and 19, under 35 U.S.C. § 112 ¶2, as being indefinite in reciting a trademark/trade name, ELICIT™, (Paper 10, at page 2).

Applicant has amended claims 10 and 19 to recite “algorithm 42” in place of “algorithm 42 (ELICIT™).”

Support for this amendment is found in the originally filed specification, and particularly, algorithm 42 is defined at pages 34 through 38, under Example 1. No new matter has been added.

Applicant, therefore, respectfully requests withdrawal of this indefiniteness rejection.

### ***Rejection under 35 U.S.C. § 102***

The Examiner has maintained the rejection of claims 6-8, 11-17 and 20-25, under 35 U.S.C. § 102(b), as being anticipated by Lenz (US 5,784,539; 21 July 1998, filed 26 Nov. 1996) (Paper 10, at page3).

Specifically, with respect to *independent* claims 6, 12, 15 and 21 the Examiner asserts that Lenz teaches:

(a) configuring, in one or a plurality of electronic databases stored in a storage device of a computer, a set of alternatives, a query set comprising at least one a query, and a set of primary bias

values, wherein each primary bias value is associated with a particular alternative of the set of alternatives, and reflects at least one human expert's prior conception of the degree of predictive value of the query for the particular alternative relative to others (citing Lenz at Fig. 1, and at col. 6, lines 31-57);

(b) inputting a user's response to the query (referring to col.6, lines 58-65); and

(c) ranking, using a software program stored on the storage device that is operative with a processor of the computer to receive and process the user's response, the alternatives according to relative likelihood, based at least in part on the set of primary bias values (citing Lenz at Fig.1, and at col.7, lines 17-47);

and, with respect to *independent* claim 15, the Examiner further asserts that Lenz also teaches: (c) transmitting the user's response to the server over the wide-area network (citing Lenz at col.38, lines 28-34).

With respect to *dependent* claims 7, 8, 11, 13, 14, 16, 17, 20, 22, 23, 24 and 25, the Examiner asserts that Lenz also teaches the further limitations of these claims (citing Lenz at: col.8, lines 19-31 (claims 7,16, 24 and 25); col.8, lines 57-65 (claims 8 and 17); col.1, lines 14-62 (claims 11 and 20); Fig. 1, and at col.3, lines 40-46 (claims 13 and 22); col.18, lines 61-67 (claims 14 and 23)).

Applicant respectfully, but adamantly *traverses* the Examiner's *anticipation* rejection with respect to applicant's above-identified claims, based on the fact that: (i) the teachings and elements of Lenz are fundamentally distinguishable from the instant invention; and (ii) that the teachings of Lenz require particular essential elements that are not present in the inventive claimed subject matter, such that anticipation by Lenz is impossible, under 35 U.S.C. § 102.

Specifically, (i) while it is true that both Lenz and the instant invention represent improvements over classic prior art *expert systems*, the instant improvement is fundamentally different than that of Lenz. In essence, Lenz has introduced *indirect* mapping via an intermediate

quality space, whereas the present invention retains the *direct* mapping aspect of the prior art, but accomplishes direct mapping in a fundamentally distinct and novel way.

**Prior art expert systems.** As previously stated in the record, classic prior art *expert systems* directly map a set of inputs (*e.g.*, case facts; input space) to a set of outputs (*e.g.*, network system architectures; output space) through a knowledge base of rules and other facts. Such mapping is *direct*, because it is based entirely on the knowledge base rules. Incorporation of new network system architectures in such systems, for example, necessarily involves updating/changing the knowledge base rules, thus making them ‘brittle’ (inflexible).

**Lenz.** Kindly refer to applicant’s attached APPENDIX B (“LENZ”), created by applicant to facilitate the present discussion (the capital letters in red are keyed to corresponding elements summarized in applicant’s APPENDIX A, which further summarizes the distinguishing features between Lenz and the instant claimed subject matter).

The improvement of Lenz is in providing an expert system design “that separates (*i.e.*, **makes indirect**) the mapping of the *input space* of case specific facts (upper half of APPENDIX B) from the determination of the *output space* (lower half of APPENDIX B) by interposing an intermediate quality space, comprising “qualities” and “quality values,” that serves as a common intermediate language (see also Lenz, col. 3, lines 15-20).

Specifically, with reference to the lower half of APPENDIX B, in the *output space*, the Lenz improvement creates a common language intermediate ‘quality space’ by assignment, by human experts, of “qualities” (*e.g.*, “Q<sub>1</sub>-Q<sub>6</sub>”) and “quality values” (*e.g.*, “V<sub>1</sub>-V<sub>4</sub>”) to particular alternative Architectures (*e.g.*, “a-e”).

In the *input space*, with reference to the upper half of APPENDIX B, the non-human expert system of Lenz encodes a set of rules that map a given set of case specific facts (user responses) input by the user into a set of case-specific required “qualities” (*e.g.*, “Q<sub>1</sub>, Q<sub>3</sub>, Q<sub>4</sub>, Q<sub>6</sub>”), rather than directly mapping to one or more of the output entities (*e.g.*, architectures “a-e”) (see Lenz, at col. 3, lines 26-29). Instead, and significantly, an “associative matching algorithm” is used to match the user required qualities with the defined qualities of the output entities (see Lenz, at col. 3, lines 29-

39). With respect to Fig. 2 of Lenz, the Lenz improvements, in contrast to the prior art, are essentially embodied in elements 110 (Quality Tables), 108 (Arch. Library), and 124 (Required Qualities); wherein the required qualities 124 and the Arch. Library qualities 108, are matched, using architecture scores, with Matching Algorithm 120. The architecture score is computed by comparing the quality value of each required quality with the quality value of the corresponding quality of the architecture (col.8, lines 56-59). This computation of architectural score of Lenz is also represented at the center right of applicant's APPENDIX B, where architectures "a-e" are scored with respect to the matched and compared qualities ("Q<sub>1</sub>, Q<sub>3</sub>, Q<sub>4</sub>, Q<sub>6</sub>") and quality values ("V<sub>1</sub>-V<sub>4</sub>").

Significantly, as represented by the dashed line (in blue) at the left center of APPENDIX B, Lenz has no human expert-mediated direct association between input (Query/User responses) and output spaces (alternative architectures).

*The instant invention.* By contrast, the instant invention does not comprise an intermediate language space that requires use of a non-human expert system inference engine, rules tables, and matching algorithm, but represents a *novel form* of expert system designed to eliminate the need for classic inference engines and rules tables. Significantly, the instant methods do not require rules tables, do not require an inference engine in the sense of Lenz, do not require 'qualitites' and 'quality values' analogous to those of Lenz, and do not rank based on architecture scores based on such quality values.

Specifically, the instant inventive methods have, in essence, queries and conditions (diagnoses) that are related by '*bias values*' that are fundamentally distinct from the vertical 'qualities' and 'quality values' of Lenz. Specifically, this is because the instant bias values reflect at least one human expert's prior conception of the degree of predictive value of a query/response for a particular alternative relative to others; that is, bias values, are direct associations of human expert assigned values with the set of alternatives. In Lenz, as represented in the Lower portion of APPENDIX B, the human expert-assigned qualities and quality values are directly associated with

alternative architectures, but are intentionally indirectly associated with User questions/responses by virtue of the intermediate quality space.

Importantly, this fundamental difference in direct versus indirect association has a profound consequence in terms comparing the instant invention with that of Lenz (and with other prior art expert systems); namely, the instant invention does not require (as Lenz does) a non-human expert system inference engine, rules tables, or matching algorithm.

Additionally, the Examiner's statement at page 17 of the present Office Action that "Lenz quality values [that are] set by the system administrator can be changed by the user" (citing Lenz at col. 6 lines 49-52, col. 19 lines 57-67, and col. 20 lines 1-3) not only does not support a conclusion that quality values are equivalent to the instant bias values (because the user is not the expert in the sense of the present invention), but actually serves to further support applicant's position--in the instant invention, a user cannot directly change a bias value, only an expert can.

Furthermore, (ii) the teachings of Lenz require particular essential elements that are not present in the inventive claimed subject matter, and the instant invention has elements (e.g., bias values) that are novel and not present in the teachings of Lenz, such that anticipation by Lenz is impossible, under 35 U.S.C. § 102. Specifically, with reference to the summary TABLE of applicant's APPENDIX A:

(1) In Lenz, the input and output space are *indirectly* associated (by means of Qualities), and *with* the use of a rule-based expert system, inference, or rules. (*see* Lenz at column 3, lines 12-37). By contrast, in the instant system, the input and output space are *directly* associated (by means of the Bias Value), and *without* the use of a rule-based expert system, inference, or rules.

(2) Lenz requires a rule-based, non-human expert system comprising an inference engine, rules tables and an associative matching algorithm. By contrast, the present system has no inference engine, no rules tables, and no associative matching algorithm.

(3) Lenz requires "qualities" for *indirectly* associating the input and output spaces. By contrast the present invention has no such qualities.

(4) Lenz requires “quality values” to further enable the indirect association between input and output spaces. By contrast the present invention has no such quality values.

(5) The instant invention comprises expert-assigned bias values, that are fundamentally different than quality values, because they directly relate user response (input) with alternatives (output).

(6) Lenz has questions that are not directly related by human experts to the architectures. By contrast, the instant invention has no such questions, but rather has questions/responses that are directly related/associate to the alternative set.

Finally, by teaching an intermediate quality space the requires an intermediate language (*i.e.*, qualities and quality values), and requires the use of rules tables, inference engines, and associative matching algorithms, Lenz not only is fundamentally distinguishable from the instant invention, but profoundly teaches away from the present invention.

Finally, while applicant believes that the present claim language is adequate to distinguish the instant claimed subject matter from the teachings of Lenz, applicant has nonetheless, to facilitate prosecution, amended *independent* claim 6 to recite “wherein each primary bias value directly associates a particular query with a particular alternative of the set of alternatives, and reflects at least one human expert’s prior conception of the degree of predictive value of the query for the particular alternative relative to others.”

Conforming amendments have been made to *independent* claims 12, 15 and 21. Support for this amendment is found throughout the originally filed application and is inherent to the originally filed claims, where bias values are consistently described and claimed as representing at least one expert’s opinion of the predictive value of a particular query for a particular alternative. No new matter has been added.

Applicant, therefore, in view of the above arguments and claim amendments, respectfully requests withdrawal of the Examiner’s anticipation rejection of claims 6-8, 11-17 and 20-25, under 35 U.S.C. § 102(b) in view of Lenz. Rejected dependent claims 7, 8, 11, 13, 14, 16, 17, 20, 22, 23,

24 and 25 should now be allowable in view of the amendments to the respective independent claims.

### ***Rejection under 35 U.S.C. § 103***

The Examiner has rejected claims 9-10 and 18-19, under 35 U.S.C. § 103(a), as being obvious over *Lenz* (U.S. 5,784,539) in view of *Hekmatpour* (U.S. 5,870,768).

Specifically, with respect to claim 9, the Examiner asserts that while *Lenz* does not teach “wherein the query set comprises a plurality of queries, and wherein ranking the alternatives involves summing and averaging of at least one of primary and secondary bias values,” *Hekmatpour* nonetheless does (citing col. 23 lines 44-49).

Specifically, with respect to claim 10, the Examiner asserts that while *Lenz* does not teach “wherein generating secondary bias values, and ranking the alternatives is achieved, at least in part by using algorithm 42...,” *Hekmatpour* nonetheless does (citing col. 1 lines 45-54, col. 9 lines 22-36, col. 10 lines 58-67, col. 11 lines 1-4, col. 14 lines 16-22, col. 20 lines 6-29, and col. 21 lines 59-62).

Specifically, with respect to claim 18, the Examiner’s rejection is in analogy to that of claim 9 recited above.

Specifically, with respect to claim 19, the Examiner’s rejection is in analogy to that of claim 10 recited above.

Applicant thanks the Examiner for the additional thoughtful analysis of *Hekmatpour* in view of *Lenz*, and in view of the instant claimed subject matter. The Examiner has cited algorithmic aspects of the inference engine-driven, hierarchically-structured knowledge base of *Hekmatpour* in the context of motivational support to apply algorithm 42-like algorithms to the teachings of *Lenz*. Applicant has considered the teachings of *Hekmatpour*, but takes no position at this point as to whether *Hekmatpour* provides an algorithm akin to algorithm 42 or for that matter provides any *motivation* for combining any such alleged algorithm with the teachings of *Lenz*.



Applicant respectfully traverses the Examiner's obviousness rejection, because, as discussed in detail above, no *prima facie* case of obviousness can be made based on *Lenz*, alone or in combination with *Hekmatpour*, and because *Lenz* profoundly *teaches away* from the instant invention.

As stated herein above (and as further summarized in applicant's attached APPENDICES A and B), the instant methods are not simply an improvement of an expert system with an intermediate language space and matching algorithm, but represent a *novel form* of expert system design to eliminate the need for classic inference engines and rules tables. Significantly, the instant methods do not require such rule tables or inference engines, do not require 'qualitites' and 'quality values' analogous to those of *Lenz*, and do not rank alternatives, based on architecture scores based on such quality values. The instant inventive methods have, in essence, queries and conditions (diagnoses) that are related by '*bias values*' that are distinct from the vertical 'qualities' and quality values of *Lenz*.

Finally, even if a *prima facie* case of obviousness could be made in view of *Lenz*, alone or in combination with *Hekmatpour*, *Lenz* profoundly *teaches away* from the present invention. *Lenz* teaches an indirect intermediate quality space the requires an intermediate language (*i.e.*, qualities and quality values), and requires the use of rules tables, inference engines, and associative mathching algorithms, *Lenz* not only is fundamentally distinguishable from the instant invention, but profoundly teaches away from it.

As described herein above, applicant has amended independent claims 6, 12, 15 and 21 to recite "wherein each primary bias value directly associates a particular query with a particular alternative of the set of alternatives, and reflects at least one human expert's prior conception of the degree of predictive value of the query for the particular alternative relative to others." *Lenz*, either alone or in combination with *Hekmatpour*, does not describe, teach or otherwise suggest the instant claimed inventive subject matter.

Applicant, therefore, in view of the applicant's claim amendments and arguments as described in detail above, respectfully requests withdrawal of the Examiner's obviousness rejection over *Lenz* in view of *Hekmatpour*.

### ***Specification***

The following amendments have been made as described herein above to the Specification in response to the Examiner's comments:

The phrase "and simple as activators" on page 14, paragraph 1, has been amended to "and not simply as activators."

"Responses the queries" on page 15, paragraph 5, has been amended to read as "responses to queries."

"What" has been removed from page 15, paragraph 7.

"Anther" on page 17, paragraph 4, has been amended to "another."

The "either" on page 21, paragraph 4, has been removed.

The brief descriptions of the drawings with respect to Figures 5 and 8 have been drastically shortened.

The *Turban* and *McNeil* references have been included in an IDS attached hereto, and applicant is in the process of obtaining the requisite copies.

Trademarks have considered and have been corrected as requested by the Examiner.

### **CONCLUSION**

In view of the foregoing amendments and remarks, applicant respectfully requests allowance of all claims 6-25, as provided and amended herein above.

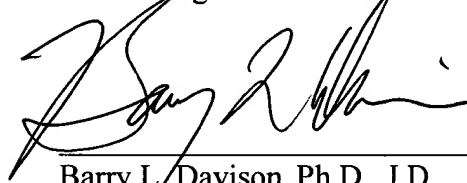
The Examiner is encouraged to phone applicant's attorney, Barry L. Davison, to resolve any outstanding issues and expedite allowance of this application.

No new matter has been added.

Entry of the present Response and Amendment is respectfully requested.

Respectfully submitted,

Davis Wright Tremaine LLP

A handwritten signature in black ink, appearing to read "Barry L. Davison", is written over a horizontal line.

Barry L. Davison, Ph.D., J.D.  
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Registration No. 47,309

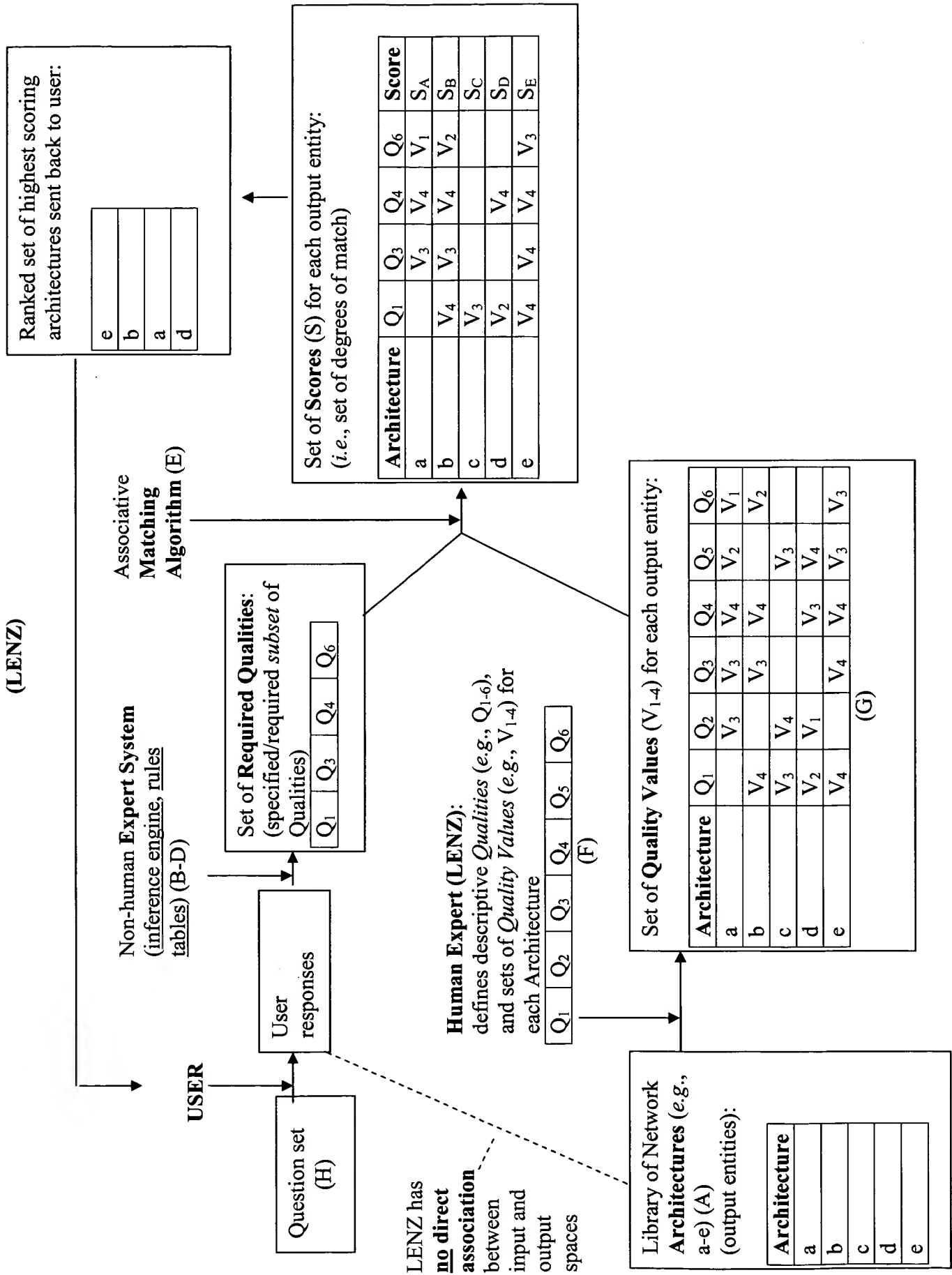
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Facsimile: 206-628-7699

## APPENDIX A

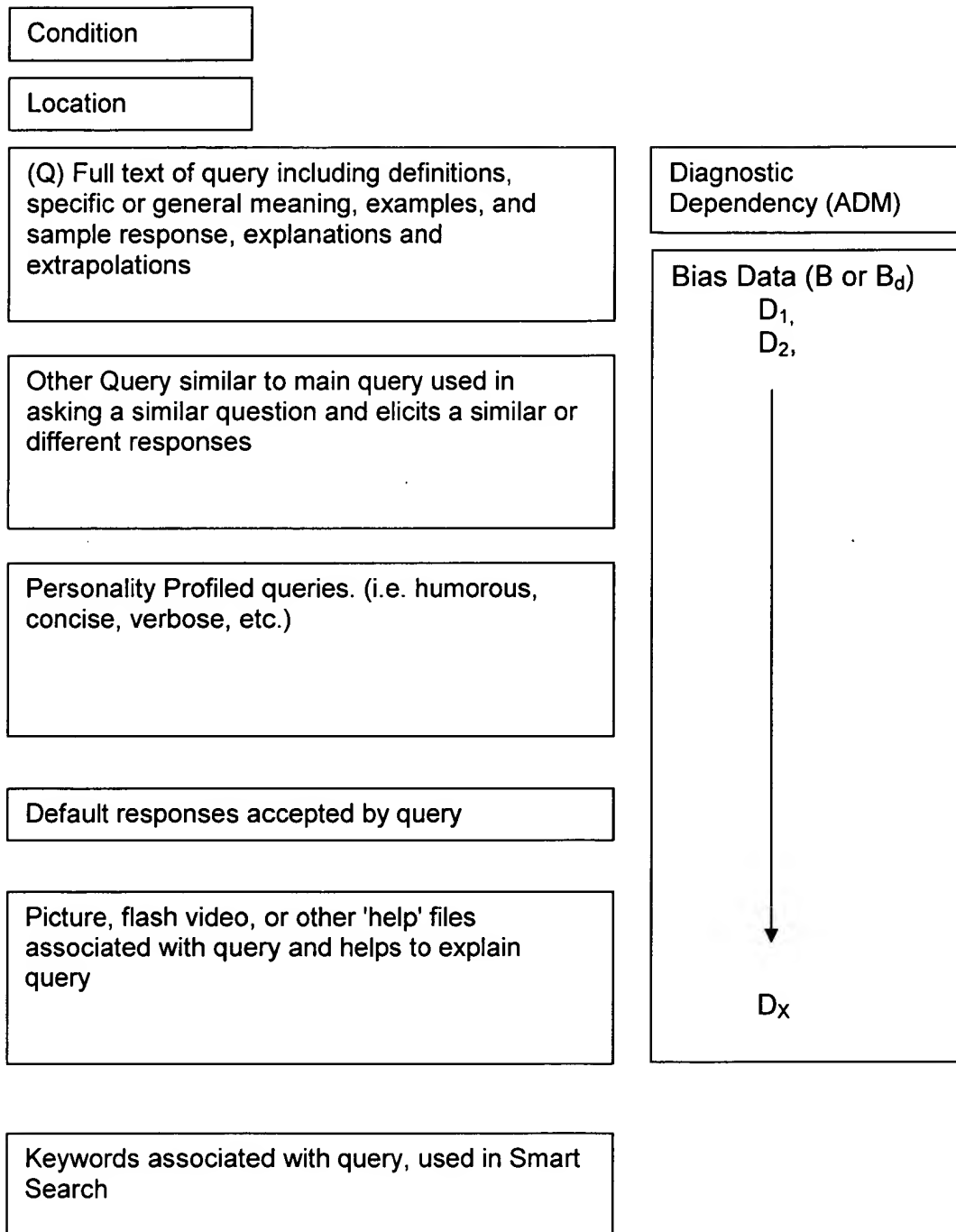
KEY ASPECTS OF LENZ:	KEY ASPECTS OF THE INSTANT INVENTION (Ahmed):
<p>In Lenz, each architecture of a set of alternative architectures is directly associated with a one or more qualities of a quality set by a corresponding human expert-assigned <i>quality value</i>.</p> <p>Therefore, the expert-assigned quality value <b>does not directly</b> relate user input (response to questions) with the alternative architectures (output entities).</p>	<p>In the instant system, each alternative of a set of alternatives is directly associated with each question of a question set by a corresponding human expert-assigned <i>bias value</i>.</p> <p>Therefore, the expert-assigned bias value <b>directly</b> relates user input (responses to questions) with the alternatives (output).</p>
<p>In Lenz, the input and output space are <b>indirectly</b> associated (by means of Qualities), and <b>with</b> the use of a rule-based expert system, inference, or rules. (see Lenz at column 3, lines 12-37)</p>	<p>In the instant system, the input and output space are <b>directly</b> associated (by means of the Bias Value), and <b>without</b> the use of a rule-based expert system, inference, or rules.</p>

REQUIREMENTS OF LENZ (with reference to diagram of Appendix B)	THE INSTANT SYSTEM (Ahmed)
Architectures (Output Entities) ("A")	Alternatives (Outputs)
Rule-Based, non-human Expert System (to derive Required Qualities) ("B")	None
Inference Engine ("C")	None
Rules Table ("D")	None
Associative Matching Algorithm ("E")	None (no quality matching done)
Qualities (Architectures are defined by expert-assigned Qualities for establishing an <b>indirect</b> relation/association between input and output space; both "object" and "required" qualities are used) ("F") (see, e.g., column 3, lines 12-37)	None (Input and output space <b>directly</b> related/associated by expert-assigned Bias Values) (see, e.g., instant Specification, original claims and throughout)
Quality Value (Expert-assigned; <b>enables indirect</b> relationship between user response (input space) and Architectures (output space)) ("G")	None (Rather, have expert-assigned Bias Values that <b>directly</b> relate each user response (input) with each Alternative (output))
None	Bias Value (Expert-assigned; <b>directly</b> relates/associates user response (input) with alternatives (output)) (see, e.g., instant Specification, original claims and throughout)
Questions ( <b>Not directly</b> related to Architecture by Quality Values) ("H")	None
None	Questions ( <b>Directly</b> associated to Alternatives by Bias Values) ( see, e.g., instant Specification, original claims and throughout)

APPENDIX B  
(LENZ)



## Query Object in Database



**FIG. 27**